Appl. No. 10/014,676
Response dated September 19, 2006
Reply to Office Action of June 19, 2006

Amendments to the Claims:

This listing of claims will replace all prior listing of claims in this application:

Listing of Claims:

1. (Currently amended) A method of communicating in and around a localized wireless coverage area, comprising:

defining a neighborhood cell by transmitting a localized wireless coverage area-identifying signal from a neighborhood cell transmitter;

establishing communication between a source mobile subscriber unit and a destination unit;

if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, receiving the localized wireless coverage area identifying signal and determining whether the source mobile subscriber unit is a subscriber on the neighborhood cell and if the source mobile subscriber unit is a subscriber, switching over to ad hoc wireless network coverage when the source mobile subscriber unit enters the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit; and

if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through the ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell, switching over to the wide area wireless

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network coverage when the source mobile subscriber mobile unit exits the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit.

2. (Original) The method of claim 1, wherein, if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to the ad hoc wireless network coverage when the source mobile subscriber receives a last hop probing signal indicating that the source mobile subscriber unit has entered the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit.

3. (Original) The method of claim 1, further comprising providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

4. (Original) The method of claim 3, wherein the providing of one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit further

comprises providing one or more stationary last hop nodes at fixed locations within the neighborhood cell each comprised of a mobile subscriber unit.

5. (Original) The method of claim 3, wherein the providing of one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit further comprises providing one or more mobile last hop nodes each comprised of a mobile subscriber unit that dynamically defines the neighborhood cell.

6. (Original) The method of claim 3, further comprising, at all subscriber units within the neighborhood cell, including the source mobile subscriber unit and the one or more last hop nodes, periodically probing a first set of mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information.

7. (Original) The method of claim 6, wherein the periodically probing of a first set of neighboring mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information comprises:

periodically probing a first set of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information; and

utilizing the ad hoc wireless network coverage route and cost information to create a least cost data packet route from the source mobile subscriber unit to the destination unit.

8. (Original) The method of claim 3, wherein the providing one or more last hop nodes within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit further comprises providing one or more last hop nodes within the neighborhood cell to multiplex mobile subscriber unit data packets onto a single channel for transmission to a wide area network.

9. (Currently amended) A method of communicating in and around a localized wireless coverage area, comprising:

establishing a data packet route to a destination unit through wide area network coverage;

determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area communication route to a destination unit through a wide area network coverage mode of operation; and

switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit upon determining that the data packet route is being disrupted and upon entry into a defined neighborhood cell, the switching over further conditioned on receiving a localized wireless coverage area identifying signal and determining whether service is available and authorized in the defined neighborhood cell.

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10. (Original) The method of claim 9, further comprising re-establishing the data packet route to the destination unit through the wide area network coverage within the defined neighborhood cell upon leaving a coverage hole within the neighborhood cell.

11. (Original) The method of claim 9, further comprising, during the ad hoc wireless network coverage, communicating with one or more stationary last hop nodes within the neighborhood cell to enable data packets transmitted on the data packet route to be multiplexed with other subscriber unit data packets onto a single channel for transmission to a wide area network.

12. (Original) The method of claim 9, wherein the switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit comprises switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit upon entering into one of a neighborhood cell coverage hole and a neighborhood cell interference region.

13. (Original) The method of claim 9, further comprising periodically probing a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage information while within the neighborhood cell.

14. (Original) The method of claim 13, wherein the periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage information comprises:

periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information,

wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information.

15. (Original) The method of claim 14, wherein the switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit when a predetermined number of network frame errors have been detected further comprises communicating, through at least one ad hoc mobile subscriber connection, with a last hop mobile subscriber unit that is connected to a wide area network for transmission of data packets to the wide area network and that dynamically defines the neighborhood cell.

16. (Currently amended) A wireless neighborhood communications system, comprising:

a last hop node for defining a neighborhood cell;

a source mobile subscriber unit including a first source transceiver for communicating through wide area wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell;

a destination unit including a first destination transceiver for communicating through the wide area ~~conventional~~ wireless network coverage outside of the neighborhood cell, and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell;

the last hop node further for causing the source mobile subscriber unit to communicate with the destination unit through the wide area ~~conventional~~ wireless network coverage when the source mobile subscriber unit is outside of the neighborhood cell, and for causing the source mobile subscriber unit to communicate with the destination unit through the ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell.

17. (Original) The system of claim 16, wherein the last hop node is a subscriber unit located at a fixed position within the neighborhood cell.

18. (Original) The system of claim 16, wherein the last hop node is a mobile subscriber unit within the neighborhood cell that dynamically defines the neighborhood cell.

19. (Original) The system of claim 16, further comprising a plurality of subscriber units located within the neighborhood cell for providing the ad hoc wireless network coverage between the source mobile subscriber unit and the destination unit within the neighborhood cell.

20. (Original) The system of claim 19, wherein the last hop node is further for periodically probing the plurality of mobile subscriber units to collect ad hoc wireless network coverage information from each of the plurality of mobile subscriber units for use in establishing the ad hoc wireless network coverage.

21. (Original) The system of claim 16, wherein the last hop node is further for regulating data packet traffic between the source mobile subscriber unit and the destination unit during the ad hoc wireless network coverage.

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